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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,326	12/14/2001	Robert C.U. Yu	A0A96	8625

7590 06/18/2004

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EXAMINER


HARAN, JOHN T

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/683,326	Applicant(s) YU ET AL.	
	Examiner John T. Haran	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment filed on 5/13/04. All previous rejections of the claims under 35 USC 112, first and second paragraphs, are withdrawn in light of the amendment to the claims and in view of Applicant's arguments.

Drawings

2. The corrected drawings of Figures 1-4 were received on 5/13/04. These drawings are accepted.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-12, 14, and 16-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu (U.S. Patent 5,688,355) in view of Schlueter et al (U.S. Patent 5,997,974).

Yu is directed to a method of making a seamed electrostatographic belt using laser ablation that eliminates the excessive thickness of the seam overlap region present in the prior art wherein the ends of the support sheet are laser ablated to have complementary shapes, are overlapped and bonded together (Column 3, lines 16-19; Column 7, line 63 to Column 8, line 22). This process results in a seamed belt have substantially no added seam thickness (See Figures 6b, 7b, 8b, and 9b). Yu teaches

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that all the ultimate layers for the belt are applied prior to seaming and is silent towards applying at least one coating to the seamed belt.

Schlueter '974 is directed to making an invisible seam ("seamless") electrostatographic belt wherein the two ends of a support sheet with complementary shapes formed by laser ablating are seamed together and then the support sheet has a series of coatings applied to provide a smooth and "seamless" electrostatographic belt (Column 4, lines 24-26; Column 6, lines 61-64; Column 12, lines 42-44; Figure 10; Column 14, lines 55-67). One skilled in the art would have readily appreciated that while Yu teaches the support sheet already having the various coatings applied before seaming, that coating the seamed support sheet of Yu with a series of coatings after seaming as taught in Schlueter '974 would result a "seamless" electrostatographic belt with the added advantage of the surface being smooth and "seamless".

The electrostatographic belts of Yu and Schlueter '974 essentially have the same layers in the same order. One skilled in the art looking at the art as a whole would have readily appreciated that the various layers can be applied to the support sheet and the belt seamed as taught in Yu or to seam the support sheet and then applying the remaining layers as taught in Schlueter '974. The advantages of applying the layers after seaming the support sheet include having a "seamless" electrostatographic belt with a smooth and seamless surface. Additionally, Schlueter '974 teaches that seaming the belt first and then applying the other layers is "by far the most economical" (Column 10, lines 40-42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an uncoated support sheet, laser ablate the ends,

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overlap and bond the ends together and then apply a series of coatings to the seamed belt in the method of Yu as suggested in Schlueter '974 in order to provide a smooth and "seamless" electrostatographic belt and to do so in an economic and efficient manner.

Regarding claim 11, Yu and Schlueter '974 teach one of the layers applied to form an electrostatographic belt is a photoconductive layer and one skilled in the art would have readily appreciated that the laser beam can't reach the entire end portion to form all the features at once and that there necessarily needs to be relative motion between the laser and the sheet. It would have been obvious to coat a photoconductive layer over the seamed belt and to have move the support sheet relative to the laser to form the desired features in the method of Yu, as modified above.

Regarding claim 2 and 4, Yu teaches passing the laser through a mask (Column 17, lines 51-60).

Regarding claim 3, one skilled in the art would have readily appreciated that the first and second ends of the support sheet have complementary shapes so that two types of masks would be needed to shape the laser beam. It would have been obvious to have two masks in the process of Yu, as modified above.

Regarding claims 5, one skilled in the art would have readily appreciated that the laser beam can't reach the entire end portion to form all the features at once and that there necessarily needs to be relative motion between the laser and the sheet.

Regarding claims 6-7 and 10, laser beams are electromagnetic radiation and particle beams.

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Regarding claim 8, Yu and Schlueter '974 teach one of the layers applied to form an electrostatographic belt is a photoconductive layer.

Regarding claim 9, Yu teaches ultrasonically welding the overlapped ends (Column 2, line 9).

Regarding claim 12, Yu teaches the laser beam illumination process (See Figure 5) described in the claim and furthermore such is well known and conventional in the art.

Regarding claims 14 Yu teaches a rabbeted joint (See Figures).

Regarding claim 17, one skilled in the art would have readily appreciated that the opposite surface of the opposite end would need to be shaped in order to have a rabbeted joint.

Regarding claim 18, Schlueter '974 teaches one of the layers applied to form an electrostatographic belt is a photoconductive layer (Column 12, lines 42-55).

Regarding claims 19 and 23-25, the support sheet of Schlueter '974 is a single layer of substantially homogeneous material.

Regarding claim 20, one skilled in the art would have readily appreciated that PET fits the parameters described for the flexible substrate sheet in Schlueter '974 (Column 11, lines 35-47).

Regarding claim 21, Yu is teaches using a masked laser and having a photoconductive layer but is silent towards moving one of the laser and the sheet relative to the other. One skilled in the art would have readily appreciated that the laser beam can't reach the entire end portion to form all the features at once and that there

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necessarily needs to be relative motion between the laser and the sheet. It would have move one of the laser and the sheet relative to the other in the method of Yu, as modified above.

Regarding claim 22, Yu teaches ultrasonically welding the overlapped ends (Column 2, line 9).

5. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu (U.S. Patent 5,688,355) in view of Schlueter et al (U.S. Patent 5,997,974), as applied above to claims 1-12, 14, and 16-25, and further in view of Schlueter et al (U.S. Patent 5,549,193).

Regarding claims 13 and 15, Yu teaches having a rabbeted joint but is silent towards use adhesive, however such is well known in conventional in the art, as shown for example in Schlueter '193 (Column 5, lines 39-42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use well known and conventional materials, such as adhesive, for seaming the belt together in the method of Yu, as modified above.

Response to Arguments

6. Applicant's arguments filed on 5/13/04 have been fully considered but they are not persuasive.

The electrostatographic belts of Yu and Schlueter '974 essentially have the same layers in the same order. One skilled in the art looking at the art as a whole would have readily appreciated that the various layers can be applied to the support sheet and the belt seamed as taught in Yu or to seam the support sheet and then applying the

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remaining layers as taught in Schlueter '974. Contrary to Applicant's assertion that there is no motivation to use the method of Schlueter '974 in the method of Yu, Schlueter '974 teaches that seaming the belt first and then applying the other layers is "by far the most economical" (Column 10, lines 40-42). Additionally, the advantages of applying the layers after seaming the support sheet include having a "seamless" electrostatographic belt with a smooth and seamless surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an uncoated support sheet, laser ablate the ends, overlap and bond the ends together and then apply a series of coatings to the seamed belt in the method of Yu as suggested in Schlueter '974 in order to provide a smooth and "seamless" electrostatographic belt and to do so in an economic and efficient manner.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

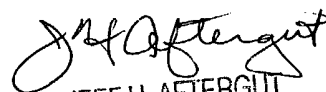
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John T. Haran** whose telephone number is **(571) 272-1217**. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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